

**EDUCATOR RESPONSE
TO
ACROSS THE CURRICULUM
TEACHING
IN THE SENIOR PHASE**

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(i)

**EDUCATOR RESPONSE TO ACROSS THE
CURRICULUM
TEACHING IN THE SENIOR PHASE**

By

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DECLARATION

I declare that "Educator response to across the curriculum teaching in the Senior Phase" is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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ABSTRACT

Since 1994 and the democratic elections in South Africa, education has undergone change and renewal. One change for education was seen in the form of Curriculum 2005. This new curriculum sought to remove the imbalances that existed under apartheid education. It was seen as an education system that would benefit all citizens in South Africa. The new curriculum was called C2005 because it was hoped that the final date for its implementation in its totality would be in 2005.

C2005 required Learning Area integration and the Outcomes Based Education (OBE) mode of teaching. These new changes, were in many instances, too soon for educators to accept immediately and implement successfully. It was therefore felt that the introduction of OBE would be fraught with problems in its implementation. C2005 received the full backing of the government and the Education Department but the response from educators at grassroots level indicated some dissatisfaction. This then called for an investigation by the Government appointed Review Committee; headed by Linda Chisholm. Several recommendations were made by the Committee. It is hoped that the changes in the Revised Curriculum would be accepted by the end of 2001 when a National Curriculum Statement is scheduled to be announced.

This case study therefore investigated the integration aspect of C2005 and the response of educators to across the curriculum teaching. The structured interview technique was used to obtain educator response to across the curriculum teaching. This sought to provide an insight into difficulties educators were encountering and what they saw as viable solutions.

The first finding that emerged from the study was that of inadequate training to implement across the curriculum teaching. The notion that content was not really important in OBE created a problem with acquiring suitable resource material. There were also concerns about assessment expressed by the educators.

The recommendations in this study focused on the importance of well structured and relevant workshops and in-service training for educators. This would enable school based educators to have the confidence to implement change in the curriculum successfully. It is also recommended that suitable resources that focus on the content for each Learning Area is developed. This would assist with integration of content, concepts, attitudes and skills. It is also vital that assessments are made grade wise so that standards are maintained and educators become familiar with competencies that are required in each grade.

Education is at the forefront of any nation. It is therefore incumbent on educators to ensure that the curriculum is optimally implemented. This can be accomplished if the Education Department has the relevant support structures and mechanisms in place.

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GLOSSARY

ACRONYMS AND ABBREVIATIONS

MLMMS	Mathematics Literacy, Mathematics and Mathematics Sciences
LLC	Language, Literacy and Communication
NS	Natural Science
HSS	Human & Social Science
EMS	Economic & Management Science
A&C	Arts & Culture
LO	Life Orientation
C2005	Curriculum 2005
OBE	Outcomes Based Education
SO	Specific Outcomes
AC	Assessment Criteria
SAQA	South African Qualification Authority
HOD	Head of Department
NQF	National Qualification Framework
GET	General Education and Training
DOE	Department of Education
ex-DET	ex-Department of Education and Training
DAS	Developmental Appraisal System

PREAMBLE

The year 2000, the new millennium, heralded changes in the curriculum for Grade 7 educators at Coedmore Primary School. Educators had to apply their knowledge acquired about Outcomes Based Education (OBE) to the classroom context. Prior to January 2000, Grade 7 educators were involved in specialist teaching. School managers were informed via the OBE Policy document in October 1999 that the timetable should not fragment learning time into too many short periods. Short periods of about 30 minutes each could restrict activity based learning experiences. The distribution of time for the learning programme in January 2000 had to be guided by the Notional time distribution as indicated in the Senior Phase Policy Document. This time-tabling policy had to accommodate Outcomes Based Education (OBE) and the notion of across the curriculum teaching at my school. Being an educator in a primary school, it meant that focus had to shift from specialist teaching to across the curriculum teaching. This adjustment had to take place in a relatively short period of time. This situation created an interest in finding out how educators at the school managed this experience, hence the idea in this study.

PART ONE

PROBLEM IDENTIFICATION, HISTORICAL BACKGROUND AND RATIONALE FOR THE STUDY

1.0.Introduction

The purpose of the study is to explore how primary school educators are responding to the adjustment from specialist teaching to across the curriculum teaching with specific reference to the Learning Area - Mathematics Literacy, Mathematics and Mathematics Sciences(MLMMS). In the primary school, educators had to shift their focus of teaching from specialist to across the curriculum. This was in line with Outcomes Based Education (OBE). This meant that educators had to be classroom based and had to therefore teach all learning areas across the curriculum, with the exception of the languages. Even at primary school, many educators feel that they are ill-equipped to teach mathematics and would rather leave it to the specialists. It was therefore decided to identify MLMMS as the learning area for the study. Furthermore, the study was confined to a particular primary school with two selected Grade 7 educators. The educators were selected on the basis of their attendance to the OBE workshops for Grade 7 educators. It was felt that these educators would be in a suitable position to identify strategies for coping with across the curriculum teaching and identify problems encountered. To explore this study further a critical question has been formulated to respond to the above stated purpose.

1.1.Critical Question

- How do educators respond to the adjustment to teaching across the curriculum with specific reference to the Learning Area MLMMS?

To understand why this critical question was chosen, one needs to understand the rationale for the study. This is presented in the next section.

1.2.Rationale for the study

Educators in the Foundation Phase were informed about OBE since 1998. They were expected to implement this new method of teaching after a short training period of two weeks. Grade 7 educators received their training in 1999 and were expected to implement it in the classroom in the year 2000. According to the Senior Phase Policy Document for Grade 7, to ensure integration across the curriculum, five phase organisers were identified. The phase organisers are: Communication, Culture and Society, Environment, Economy and Development and Personal Development and Empowerment. The phase organisers should be present in some way in all eight Learning Areas (Department of Education, 1997:26-27). Arising from a brief pilot discussion with one of the Grade 7 educators the following information was gathered :

- Educators were not adequately prepared to teach all subjects, for example, Mathematics.
- The educator lacked confidence in the teaching of this particular Learning Area since there was insufficient training.
- The educator had not taught in this particular Learning Area before and had to therefore study the textbook before teaching .
- The educator had to enquire about certain aspects of the curriculum from other educators that had taught that particular Learning Area before.
- The lack of confidence resulted in the educator not being the best person to teach that particular Learning Area. Since OBE required across the curriculum teaching, it was taught on a trial and error basis.

The educator made the suggestion that instead of the Developmental Appraisal System (DAS), in-service training in Mathematics and Science should be provided. This gave the researcher the impetus to focus on "across the curriculum teaching" and in particular the Learning Area MLMMS. Education in South Africa needs to be placed in its historical context to understand the paradigm shift from specialist teaching to across the curriculum teaching and OBE.

1.3. Historical Background

When South Africa gained its democracy in 1994, it became necessary to change the system of education in order to transform teaching and learning. There was a shift from the traditional aims and objectives approach to Outcomes Based Education(OBE). The subject-centred curriculum offered separate subjects, neatly and distinctly timetabled throughout the school day but reality is not so neatly partitioned and structured (Coutts, 1996:4). The child-centred view of the curriculum is reflexive, dynamic and the child is viewed as a free spirit who is developing individually, emotionally, intellectually, socially and psychologically (Coutts,1996:5). In order to transform teaching and learning, curriculum change had to take place.

1.4. Curriculum Change- C2005

Learner-centredness is policy in Curriculum 2005 (Malcolm,1999:103). Curriculum development puts learners first by recognising and building on their knowledge and experiences and responding to their needs. Furthermore, learner achievements occur at various levels and at various rates in accordance to the acquired competency. The learning programme for C2005 follows a framework as outlined in the policy document for each phase but the means and ends of reaching is determined by the needs of the learners. Curriculum 2005 advocates lifelong learning. This paradigm shift of lifelong learning through a National Curriculum Framework is a prerequisite to achieve the following vision for South Africa:

A prosperous, truly united, democratic and internationally competitive country with literate, creative and critical citizens leading productive, self-fulfilled lives in a country free of violence, discrimination and prejudice (Department of Education, 1997:1).

A detailed discussion on C2005 follows in part two of the study. In order to implement C2005, OBE had to take place in the classroom.

1.4.1. Outcomes Based Education (OBE)

The teaching approach in the classroom aimed at increasing general knowledge and development skills, thinking, attitudes and understanding is called Outcomes Based Education (OBE) (Moodley, 2000:1). OBE is centred around developing and promoting learners experiences and not just a body of knowledge or information. Pupils are expected to be active participants in lessons, whether they be field based, group discussion or practical experiments. Outcomes-based education is a management system. It is an approach to managing curriculum control, curriculum design, assessment and reporting, teachers and accountability, change and innovation (Malcolm, 1999:78). The goal of OBE is to have every child learn effectively and learn things that are worthwhile. The sixty-six outcomes have been promulgated by teams at National Government. All pupils had to achieve the outcomes, but at different levels, before they completed that particular phase. In OBE, the traditional syllabus has been replaced by the Senior Phase-Policy Document. The policy document is phase specific and not grade specific. Although it replaces the syllabi, it is not content based, that is, content is no longer prescribed for educators. It outlines skills, knowledge, values and attitudes (outcomes) which the learner must develop. The syllabi has to be consulted on a regular basis to plan, design and develop the learning programme. Instead of subjects, OBE has Learning Areas. A detailed discussion on OBE follows in part two of the study. The Learning programme for the Senior phase is described since the study focuses on across the curriculum teaching in Grade 7.

1.4.2. Learning programme - Senior phase

The senior phase is from Grade 7 to Grade 9. The teaching and learning programme is highly contextualised and integrated (cross-curricular themes or topics) (Department of Education, 1997: 5). This immediately reveals that for the learning programme to be successful, the educator has to be classroom based rather than specialist based in order to ensure that integration takes place.

There are eight Learning Areas in the senior phase. The Notional time distribution for the Senior phase reflects the national priorities of South Africa at present and for the next 5 - 10 years (Department of Education, 1997: 26-27). Notional time represents contact

time, learner's efforts and time, preparation time and other issues (Department of Education, 1997:18). The Notional time distribution for C2005 and the draft revised curriculum is as follows:

**Table 1.1: Notional Time distribution for C2005 & Revised Curriculum-
adapted from: Curriculum 2005**

CURRICULUM 2005	Notional Time	REVISED CURRICULUM
LLC(Language, Literacy and communication)	20%	25%
MLMMS(Mathematical Literacy, Mathematics & Mathematical Science)	13%	18%
NS(Natural Science)	12%	13%
Technology	10%	8%
HSS(Human & Social Science)	10%	12%
EMS(Economic & Management Science)	10%	8%
A & C(Arts & Culture)	10%	8%
LO(Life Orientation)	10%	8%
Flexi-Time	5%	

Source: (<http://www.polity.org.za/govdocs/reports/education/curric2005: 2001>) & Draft Revised National Curriculum Statement for Grade R-9 (A:\draft revised national curriculu.htm: 2001: 32).

One would notice from Table 1.1 that the notional time allocated to LLC is the largest since language is important in communication in any Learning Area. Since South Africa has embarked on transformational OBE, it involves the most radical form of an integrated curriculum. Integration is not only across the disciplines into Learning Areas but also integrating across all eight Learning Areas in all educational activities (Department of Education, 1997: 31). Cross-curricular themes or topics are chosen for integration. The time allocation for each Learning Area is an indicator that concepts specific to the learning area as well as cross-curricular themes need to be covered. C2005 allows for

flexi-time on the timetable. Flexi-time allows schools to identify time, resources, staff to organise activities and issues of general importance for the Senior Phase as a whole. Flexi-time in the Revised Curriculum has been incorporated into increased time for certain Learning Areas. It is also noticeable from Table 1.1 that there is an increase in time allocation for LLC and MLMMS in the revised curriculum. This is due to the government's priority being placed on Language and Mathematical literacy and to ensure that there is sufficient time to cover important concepts characteristic of these two Learning Areas. Each Learning Area has a set of Specific Outcomes and Assessment Criteria. This therefore necessitates the adjustment from specialist teaching to across the curriculum teaching for integration to take place. This study focuses on the Learning Area MLMMS which is guided by the Specific Outcomes in Table 1.2.

Table 1.2: Specific Outcomes (SOs) for MLMMS

SOs	FEATURES
SO 1	Demonstrate understanding of ways of working with numbers.
SO 2	Manipulate numbers and number patterns in different ways.
SO 3	Demonstrate understanding of the historical development of mathematics in various social and cultural contexts.
SO 4	Critically analyse how numerical relationships are used in social, political and economic relations.
SO 5	Measure with competence and confidence in a variety of contexts.
SO 6	Use data from various contexts to make informed judgements.
SO 7	Describe and represent experiences with shapes, space, time, and motion, using all available senses.
SO 8	Analyse natural forms, cultural products and processes as representations of shape, space and time.
SO 9	Use mathematical language to communicate mathematical ideas, concepts, Generalisations and thought processes.
SO10	Use various logical processes to formulate, test and justify conjectures.

Source: Department of Education (1997:3)

The Specific Outcomes are demanding on the educators, especially if the Learning Area is not their specialist field. A case in point is SO6, which refers to the use of data from

various contexts. This SO requires educators to have a knowledge of statistical tools, report writing to communicate findings and being critical in evaluating the findings and simultaneously find a method of imparting these aspects to the learners. Without guidelines to follow, educators would experience a problem. Even SO 8 poses a problem because it seems vague to the educators. If there are no specific guidelines to follow, then it is a problem to the educator. Learners are expected to unravel, critically analyse and make sense of the natural forms, relationships and process in this particular SO (Department of Education, 1997:28). This requires some form of guideline to the educator as to how these aspects would be executed.

Since a particular school has been chosen for this study, it is important to obtain some historical data about the school.

1.5.The context of the study

Coedmore Primary is a public school situated in the Durban-South Region. It has a school population of 443 with, a principal, two HODs and nine level 1 educators. The school opened its doors on 15 October, 1938. The school received a grant from the Government and was called "Coedmore Government Aided Indian School". The roll was 47 pupils. Mr.K.L.Stainbank assumed managership of the school (Log book, 1938). On 24 March, 1944 a report was written on the principal which indicated that the principal taught standards 4, 5 and 6 and was therefore involved in a full days teaching. There was a sharing of teaching and all grades were housed in one hall. Teachers had to shout to make themselves heard. The Introductory class and Class 1 usually worked outside. The pupils sat on boards placed on stones. Many had no slates and had to write on the sand. The latrine accommodation was very unsatisfactory. There were three dilapidated latrines, one for the staff, one for the hundred boys and one for the fifty girls. The children therefore had to use the neighbouring banana plantation (Log book, 1944). In 1965, the Bharathy Government Aided Indian School in Merebank was closed and the teachers and pupils were transferred to the Coedmore State Aided Indian School. There were sixteen educators, one principal and four hundred and sixty one pupils (Log book, 1965). In May, 1977, the Education Committee wrote to the director of Indian Education informing him of the desire to have the words "State Indian " removed from the name to "Coedmore Primary School"(Logbook, 1977). The current enrolment figures at the school are indicated in Table 1.3.

Table 1.3: Enrolment figures -1997 to 2001

YEAR	HOME LANGUAGE		ISIZULU	SESOTHO	TOTAL	% ENG	% 2 nd LANGUAGE
	ENGLISH	ISIXHOSA					
1997	320	7	313	1	641	49.9	50.1
1998	257	8	313	3	581	44.2	55.8
1999	229	9	292	2	532	43.0	57.0
2000	212	10	237	4	463	45.8	54.2
2001	185	12	243	3	443	41.8	58.2

Source: EMIS document (1997- 2001)

Table 1.3 indicates that there has been a steady decline in enrolment at the school during the period 1997-2001. It is interesting to note that since 1998, the number of learners that indicated English as their home language were less than the number that indicated Isizulu as their home language. This school now offers Isizulu as the second language whilst English remains the language of teaching and learning.

Having provided some historical background to the school, some understanding of the curriculum history had to be examined.

1.5.1. Curriculum Issues

Prior to 2000, teaching was done with some degree of specialisation in the Senior Primary Phase. In October 1999, two Grade 7 teachers from Coedmore Primary were prepared for the teaching of Outcomes Based Education (OBE) which was in keeping with the requirements of Curriculum 2005. The training for the Grade 7 educators was held at the Chatsworth Teachers' Centre. The duration of the training was one month. At the end of this period the educators were deemed as suitably qualified in OBE to teach Grade 7 pupils in 2000. They were further given the task to cascade the information obtained about OBE to their colleagues so that transformational OBE could be implemented throughout the school.

1.5.2. Curriculum integration policy

According to the OBE Document received in October 1999, OBE and across the curriculum teaching had to be implemented in Grade 7 in 2000. Educators had to shift their focus from specialist teaching to across the curriculum teaching in a short space of time. If one reflects upon the underpinning of across the curriculum teaching what emerges is the Integrated Model. The Integrated Model uses the cross disciplinary approach and blends disciplines by finding the overlapping skills, concepts and attitudes. Integration is the result of sifting related ideas out of the subject matter content (Fogarty, 1991:64). Depending on the principal of the school, other educators in the various grades had to try the implementation of OBE without sufficient training. This led to educators looking for books that dealt with phase organisers or some semblance to outcomes rather than being content based.

1.6. Research Design

This research represents qualitative research. It is qualitative because it involves surveying the responses of educators to the changes in the teaching policy and the required adjustments made by the educators. The site selected was a public school where C2005 was to be implemented. The participants in the research were the Grade 7 educators who responded to across the curriculum teaching. The researchers role was that of interviewer. The interview records and transcripts of the structured interviews provided the data for analysis. The analysis of the data revealed certain characteristics which were presented in a descriptive narrative (McMillan & Schumacher, 1993: 574).

1.6.1.Sample

Two Grade 7 educators were chosen because they were the educators that attended the OBE workshop held in October 1999. The researcher was of the opinion that the two educators were in the best position to advise on coping and responding to across the curriculum teaching. These educators had taught Grade 7 previously and could therefore compare specialist teaching to across the curriculum teaching. Furthermore, these educators could share their experiences and suggestions with educators that were new to the field of OBE.

The researcher concentrated on the Learning Area MLMMS (Mathematical Literacy, Mathematics and Mathematical Sciences) because from the pilot data it was perceived that this may be a problem area for the educators since they were not specialists in the field and the anecdotal evidence assisted with this decision. There is also the perceived notion that MLMMS and NS (Natural Sciences) are two learning areas that require sufficient prior knowledge in the field to teach them. Both educators did acknowledge that prior knowledge about content and methodology was needed in the successful teaching of MLMMS and that this could be attained through in-service training.

1.6.2. Research instrument

Structured interviews were conducted with two educators from Grade 7.
(See Appendix I for the interview schedule).

The interview is used as a means of data collection since it affords greater opportunity for probing. A predetermined list of questions were posed to the respondents. The questions focused on factors that were relevant to the problem. The same questions were asked of everyone in the same manner. Sometimes the researcher may follow a lead from the respondents answer by asking other relevant questions not on the schedule. Through this process, new factors may be identified and a deeper understanding may result (Sekaran, 1992: 192). To obtain honest information from the respondents, the researcher-interviewer was able to establish rapport and trust with the interviewees. The respondents were made comfortable enough to give informative and truthful answers without fear of adverse consequences. To ensure this, the researcher stated the purpose of the interview and assured complete confidentiality about the source of the responses (Sekaran, 1992: 194).

Two Grade 7 educators had been interviewed on an individual basis so that their responses to questions would not be influenced. The interview was conducted face to face at the educational institution used in the case study. The interview was conducted in the afternoon, after the dismissal of the learners. The interview required biographical, contextual information, explanations and interpretations, feelings, attitudes and beliefs about across the curriculum teaching. The responses were to questions posed on problems experienced in adjusting from specialist to across the curriculum teaching, the impact that the change made on their teaching, the training they received to embark on

this curriculum change and the benefits they had experienced. The information obtained assisted in understanding how educators were responding to across the curriculum teaching.

The Structured interview was used to note educators response to across the curriculum teaching in the specific learning area MLMMS.

The questions were categorised as follows:

- Profile of educators
- Problems with across the curriculum teaching
- Preparation for teaching
- Impact on teaching
- Training
- Curriculum benefits
- General

(See Appendix 1 for the Interview Schedule)

These categories adequately respond to the critical question "How do educators respond to the adjustment to teaching across the curriculum with specific reference to the Learning Area MLMMS ?"

1.7.Limitations

The study is a case study reflecting how educators are responding to across the curriculum teaching of a particular school and may therefore not be representative of all primary schools. The sample size is small due to the limited number of educators available at the school and the number that had attended the OBE workshop. Given the scope of the study, a greater number of educators could not be selected in the sample.

1.8. Conclusion

This section of the study sets the scenario for the research by providing the rationale and the critical question which forms the basis of research. Aspects of Curriculum 2005 (C2005) and Outcomes Based Education (OBE) were explored. The historical background into the education system and the paradigm shift due to policy changes were

also noted. Furthermore, the context of the study together with the research design and the limitations were presented.

In the next section, the literature review is presented.

PART TWO

LITERATURE REVIEW OF POLICY ISSUES

2.0. Introduction

This section of the study begins with a detailed description of C2005 and OBE. Aspects identified by the Review Committee are noted and the Mathematics Learning Area is contextualised within the streamlining and strengthening of C2005.

Prior to 1994, education under apartheid was characterised by fragmentation along racial and ethnic lines, a lack of access or unequal access to education and training and the lack of democratic control within the education and training system. Students, teachers, parents and workers were excluded from the decision-making processes (ANC, 1995:3).

When a country changes government, policy changes are inevitable. Since 1994, restructuring education has been a top priority for the government (Pretorius, 1998:2). The South African government introduced curriculum-related reforms in order to democratise education and eliminate inequalities in the post-apartheid education system. One of the pedagogical reforms was OBE, an approach to education which underpins the Curriculum 2005 (Jansen, 1998: 321).

2.1. Curriculum 2005

Curriculum is the basis of any education system, therefore changes in the structure and organisation becomes insignificant unless accompanied by a rethink on the real substance of education, which is the curriculum (Kelly, 1989: 1). Curriculum must thus be seen as descriptive rather than prescriptive (Kelly, 1989:11).

referred

Curriculum 2005 is the most significant curriculum reform in South African education in the last century. It was both bold and revolutionary and it intended to overturn the legacy of apartheid education in the interest of all South Africans. No longer would curriculum be shaped by narrow visions, concerns and identities, or the limited interest of one particular group. It would encompass education and training, content and skills,

values and knowledge (<http://www.polity.org.za/govdocs> 2001; Naicker, 1999:90). It is thus essential to identify the characteristics of C2005 given its relevance to the study.

2.1.1. Characteristics of C2005

C2005 has three distinct characteristics, it is learner-centred, outcomes-based and there is integrated and non- disciplinary division of knowledge (<http://www.polity.org.za/govdocs>, 2001). The dominant design principle of C2005 which is integration, rests on five design features:

- the 12 critical outcomes, or 'generic skills 'prescribed by SAQA (South African Qualifications Authority).
- the 66 specific outcomes to be related within and across Learning Areas.
- the learning programmes which integrate Learning Areas.
- the phase organisers, which are broad skill/issue clusters.
- the programme organisers, where issues are chosen by the teachers from everyday life to reflect local and social priorities ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

C2005 arose out of the need to integrate education and training through the National Qualification Framework (NQF). The NQF provides the means to register all types of learning achievements within one of eight levels. A fundamental goal of the NQF is to create a mechanism to enable lifelong learning. Level 1 is the General Education and Training band (GET), level 2-4 is the Further Education and Training band (FET) and level 5-8 is the Higher Education and Training band (Du Pre', 2000:10). As an assessment, qualifications, competency and skills-based framework, C2005 encouraged the development of a curriculum model aligned to the NQF in theory and practice. This model drew on a variety of current ideas in the international arena and reshaped them to fit local conditions. Included in the model was Outcomes Based Education (OBE) ([Http://www.polity.org.za](http://www.polity.org.za), 2001). Education in South Africa is therefore connected to the (NQF) which is set up and monitored by South African Qualifications Authority (SAQA) (Spady & Schlebusch, 1999: 55; Malan, 1997: 18). This quality assurance system focuses on recognition of both newly acquired learning as well as prior learning achievements. The role of the quality assurance system is to ensure that credits, unit standards and qualifications at all levels comply with recognised national and

international standards and qualifications obtained by learners comply with set standards (Du Pre', 2000: 10). Learning and skills which people acquire through experience and informal training is formally assessed and credited towards qualifications (ANC, 1995:11; Pretorious, 1998:3; Malcolm, 1998: 51; Graaff & Parker, 1997:3). The state pays for compulsory, free education for the first nine years (Spady & Schlebusch, 1999: 56). It was largely the result of deliberations within the NQF to integrate education and training that the debate on competencies was extended to education. The competencies were reframed as 'outcomes' in the Department of Education (Jansen, 1998: 322).

The difference between teacher-centred education and learner-centred approach needs to be explained to understand the need for a paradigm shift. A paradigm is a framework for identifying, explaining and solving problems. It is a way of interpreting the world and all one's experiences. Generally, people understand the world according to the way in which they have been taught thus becoming located in a particular paradigm (Naicker, 1999:92).

2.1.2 Teacher - centred education

Prior to the introduction of C2005, knowledge acquisition was what went on at schools. A subject-based curriculum is one which maintains subject boundaries and the resulting curriculum is a collection of separate subjects (Pollard & Triggs, 1997: 122). Learners had to master the subjects that had been selected as 'all you needed to know' about the six subjects (English, Afrikaans, Mathematics, Science, History and Geography). They were tested on the syllabus for each of the subjects (Spady & Schlebusch, 1999:10). This approach was teacher-centred. There was repetition and constant revision to ensure that the child remembered and reproduced the information in the examination. The teacher's role was to give facts to the learners. The teacher assumed the controlling role to ensure that objectives of the lesson were met. This retarded the development of critical, independent thinking and reduced the learner responsibility to doing well in tests and examinations. The over-emphasis on the transmission of factual information reduced the learner's intellectual involvement to rote learning(Allais & McKay, 1995:82-85).

2.1.3 Learner-centred approach

The reality of learning in the new millennium is that children need experiences and tools to de-code messages, to stand firm, make their own decisions and to be inventive. Rote-learning is not needed when you know how to look up a reference or call up a computer source. According to Spady & Schlebusch (1999:23), you don't need to spend time memorising lists when you could learn how to do things.

The South African Constitution promises every child the right to quality education-quality teaching and learning. "Quality learning" implies that effective learning occurs, and that the things learned are worthwhile (Malcom, 1998: 9). Learner-centred education calls for a curriculum that links to children as individuals, members of the community, their interest, experiences, cultures, learning styles, abilities and dreams. Teachers have to be the curriculum designers and be given the freedom to design it. They have to take the responsibility for assessment, because they know what the children did at school and how they did it (Malcolm, 1998: 10). Children take some responsibility for decisions (what to do next, how to do it), for contributing to knowledge (by thinking, talking with parents, reading) and helping other children (Malcom, 1998: 40). Therefore, OBE enables students to learn more, demonstrate higher levels of skills and get credit for their accomplishments (Spady & Schlebusch, 1999:30).

The re-engineering of the learning system towards the outcomes-based approach is thus a major attempt to build the country into becoming an international role-player (Olivier, 1999:20). With OBE, the teacher facilitates learning by stimulating creativity, self learning and critical thinking (Olivier, 1999: 3). If one had to compare the curriculum prior to 1994 with that of C2005, one recognises the need for a reconceptualised curriculum.

2.2. Reconceptualised curriculum

When one has to 'reconceptualise' the curriculum as in the case of C2005, it involves a paradigm shift and a refreshing look at schooling experiences that moves away from activities that set predetermined ends or learning objectives. The reconceptualised curriculum is one that is evolving and has a strong focus on the learner. According to

✓ (Graham, 1992:27), as cited in (Chetty & Sookrajh, 2001: 1), the learner's search for meaning is an interactive and reflective process undertaken in a social milieu. Children learn by gathering information and experiencing the world around them. The importance of knowledge, beliefs, and skills an individual brings to the experience of learning is emphasised. The construction of new understanding is a combination of prior learning, new information, and readiness to learn (<http://www.sedl.org/scimath/compass/v01n03/construct.html>. 1999:1).

The reconceptualised curriculum dwells on the nature of one's inner experience. There is a need to study the past to reconceptualise the present situation with the intention of providing an alternative to the present. To achieve this, one has to critically analyse the process of production of the alternative, examine the forces involved in its production and question the interests of the stakeholders in the production of new knowledge (Chetty, 1997: 62). Furthermore, Freire, cited in Chetty, 1997: 62) argues that the form and content of knowledge, as well as the social practices through which it is obtained have to be seen as part of culture and the forms of empowerment. Freire views the student's experiences as central to the construction of knowledge since they don't arrive at the classroom empty handed. They bring with them opinions about the world and about life (Chetty & Sookrajh, 2001:3- 4). This paradigm shift was essential to firstly, accept C2005 and secondly to encourage an integrated approach to teaching.

2.3 Implementation of Curriculum 2005

When the Minister of Education announced the introduction of the new curriculum in 1995, implementation was scheduled for all grades (1-12) by the year 2000. In 1997, the implementation timetable was revised to 2005, and the new curriculum became known as Curriculum 2005. To date, the new curriculum for Grades 1, 2, 3, 4, 7 and 8 has been implemented. It is hoped that by 2005, implementation in all grades will be completed.

From the start, the process of implementation was faced with difficulties. In spite of enormous political will and effort, social demands were not matched by financial, physical and human capacity. Firstly, there was social pressure for visible change in all areas. Secondly, there was financial tightening causing problems with delivery for C2005. In addition, implementation was not well thought through, properly piloted or resourced and strain was placed on already burdened principals and teachers. Better resourced schools coped but complained of excessive paperwork whilst inadequately

resourced schools were hampered by poor infrastructure, large classes and the absence of technologies of teaching, including educational resources such as textbooks, exercise books and pens (<http://www.polity.org.za>, 2001). Although the emergence of a new curriculum to replace that of apartheid education was an achievement, its structure and design was compromised by the availability of human and financial resources and the time frames adopted ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001; Jansen, 1998:325- 327).

The manner in which C2005 was implemented was through Outcomes Based Education (OBE).

2.4. Outcomes Based Education (OBE)

According to Spady and Marshall (1994:1) as cited in (Pretorius, 1998: ix), OBE is nothing new. Outcomes, for example, are achieved when we teach a child to cross a road. Kudlas (1994:32) cited in (Pretorius, 1998:ix) also states that it is a common sense approach to education. According to Kudlas (1994:32), cited in (Pretorius, 1998: ix) an outcome is a demonstration of learning and what the student is to know or do.

Spady(1994: 18) cited in (Pretorius, 1998: ix) states that an outcome is a high quality demonstration of learning that occurs at the end of the learning experience. It happens in a real life setting and is influenced by different elements that makeup that setting. An outcome is not a great deal of content that a learner has memorised. It is not a test score, symbol or percentage. It is rather the visible, observable demonstration of what the learner can do as a result of the learning experience. However, some outcomes are based on facts and skills like in the areas of mathematics and language.

OBE is a system of learning and teaching that is learner centred and is based on the understanding that all learners can learn. OBE is a single system of education that can accommodate all learners, including learners who experience barriers to learning (Naicker, 1999:87). OBE is seen as an approach to education while C2005 as 'the curriculum' that has been developed within an outcomes-based framework and is in the process of being implemented in the schools. The DOE (Department of Education) teacher's Manual for Grade 7 adapts Spady's ideas to describe a 'South African 'version of outcomes-based education. It sees OBE as 'in essence ..defining, organising, focusing and directing' all aspects of a teaching system in relation to what we want *all* learners to

demonstrate successfully when they exit the system (<http://www.polity.org.za>, 2001). Planning back from outcomes is a central aspect of the methodology. C2005 is a planned process and strategy of curriculum change underpinned by elements of redress, access, equity and development. To achieve these, C2005 uses methodologies embedded in progressive pedagogy such as learner centredness, teaches as facilitators, relevance, contextualised knowledge and co-operative learning. Initially with C2005, content was de-emphasised. Ignoring content is problematic, especially if the teacher's content is weak. The Teacher Development Directorate Interview felt that content has to be revisited (<http://www.polity.org.za>, 2001). Bill Spady who was largely responsible for shaping OBE, distances himself from South African OBE. He says 'It is more of a professional embarrassment than those making the suggestions..will ever realise.' He observes there is a gross distortion from the original ideas. In response to many problems encountered in the implementation of education there is a call for 'back to basics' - where all could read, write and do mathematics (<http://www.polity.org.za>, 2001).

The key features of OBE according to (Pretorious, 1998:41) are :

- the achievement of outcomes plays a key role in the new education and training system.
- the Learning Areas form the centre of the school curriculum which leads to the development of the learning programme.
- the learning programme is the nodal point around which learning should take place in the school.
- the assessment criteria, range statements and performance indicators will help the teacher/ trainer in developing programmes to achieve the outcomes.
- it is necessary to use organisers to cluster the eight Learning Areas in a meaningful way.
- to ensure that quality education is delivered, standards which reflect national standards are necessary.

The principal feature of OBE is the distinction between in-puts and outputs. Outputs (also described as standards) are centrally designed and prescribed while inputs are discretionary and managed locally. Inputs include what teachers and learners bring to learning, indigenous particularities and priorities, textbooks, management and support

systems. According to Malcolm (2000) as cited in [Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001), the key input of what is taught should have very little prescription since they vary across contexts. Quality is assessed in terms of outputs. The quality of outcomes is dependent on inputs. The success of Outcomes Based Education depends on the quality of teachers, their content knowledge, their facility with teaching methods, and their access to learning programmes and textbooks. It means teachers need greater guidance and support in content specification ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

Furthermore integration requires thematic continuity and C2005 has prescribed this in terms of phase organisers. There has been some 'prescribed' methodologies like groupwork ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). Since the main concern of designers has been integration, there has been underspecification of the requirements for conceptual coherence across all eight Learning Areas. This resulted in design features without clarity. The result is a curriculum that is overdesigned yet under-specified ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). When Learning Areas with distinctive conceptual coherence are driven mainly by integration, then potential for conceptual progression is retarded. This could result in a learning programme that has no conceptual sequence and no learning progression path. The Programme organisers cannot drive conceptual development. The condition for success is a prior grasp of the conceptual ladder that should underlie the Learning Area. Teachers who teach successfully with programme organisers have a scheme of conceptual progression underlying the lesson ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

Inherent in the implementation of C2005 were many problems which needed to be identified and addressed. This was done through the review of C2005.

2.5. Review of Curriculum 2005

On 8 February 2000, the Minister announced the establishment of the Review Committee.

The committee was required to investigate :

- Steps to be taken in the implementation of the new curriculum in Grades 4 and 8 in 2001.
- Key success factors and strategies for the strengthened implementation of the curriculum.

- The structure of the new curriculum .
- The level of understanding of outcomes-based education.

(<http://www.polity.org.za/govdocs>, 2001). The review process included : document review, site visits and interviews and public submissions.

2.5.1. Findings of the committee

Although understandings vary about OBE and C2005, the large majority who have had exposure to Outcomes-Based Education support the underlying principles of the new curriculum. The Review Committee had the following to report about C2005:

- Complex language and confusing terminology was used in C2005 documents. There was unnecessary use of unfamiliar terms to replace familiar ones and there was a lack of common understanding and use of C2005 terminology (<http://www.co.za/govdocs>, 2001:11).
- Overcrowding of the curriculum was caused through the inclusion of eight Learning Areas in the GET band. This has meant insufficient time for the development of effective reading skills, foundational mathematics and core concepts in the sciences. This aspect was also identified by independent research conducted by industrial psychologist Louise Holman, of the Holman Institute for educational and psychological Evaluation and Research. The research indicated that Foundation phase pupils (grade 1 to 3) need more exposure to reading, written comprehension and finding solutions in written contexts and special attention was needed with multiplication tables (The Mercury, February 14. 2001:5).
- Regarding progression, pace and sequencing in design, C2005 is strong in integration and weak on conceptual coherence. It is supported by critical outcomes, specific outcomes, learning programmes, phase organisers and programme organisers but progression is neglected. This is largely due to avoiding the prescribing of content.

- There needs to be a coherent policy document on assessment aligned with curriculum and containing clear guidelines and procedures.
(<http://www.co.za/govdocs>, 2001:11).
- The focus of training sessions was on orientation to the new terminology and there was little attention to the substance of OBE or C2005. Curriculum change is an on going process that may take many years to achieve. There were complaints about the Cascade Model of training .
- Problems with learner support materials in support of C2005 range from availability, quality and use, as well as training which teachers were given. Absence of basic resources such as stationery increase the problem.
- Follow-up support was insufficient from the department and school management .
- Level of understandings of C2005 varied within and between schools. Many are confused about the design and implementation of C2005. Teachers have a shallow understanding of OBE/C2005 ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001: 12). When asked about the distinction between C2005 and OBE, educators felt it was the alternate way of expressing the same set of ideas.
- Educators held several myths about C2005. They mentioned aspects like, it has nothing to do with content, anything goes, textbooks are not used, groupwork is compulsory ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

Finally, there was agreement that C2005 was implemented before it was ready for presentation and without the foundation for good inspiring training, effective monitoring and on-going support put in place ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

2.5.2. Recommendations of the Review Committee

The review committee proposed a revised and streamlined curriculum within a broad outcomes-based framework and implemented within manageable time-frames in the following manner:

- Simplify curriculum documents by producing a National Curriculum Statement for ECD (Early Childhood Development), GET (General Education and Training), FET (Further Education and Training) and ABET (Adult Basic Education and Training). It should explain in clear terms what is to be learned and what is to be assessed.
- Reduce overload by rationalising Learning Areas from 8 to 6 in the GET band.
- specifying learning outcomes and assessment standards by grade and providing more time for mathematics and languages in the GET band.
- Preparation of teachers which links pre-service with in-service training.
- To address the quality of Learner Support Materials, DOE should give clear statements to publishers that textbooks should be produced and evaluated in line with these statements.
- To provide support for the teacher, there is a need to reorganise curriculum structures, roles and functions and train school principals, managers and teachers as curriculum developers (<http://www.polity.org.za/govdocs>, 2001).

The Review Committee concluded that C2005 was too complex and insufficiently balanced and there was a lack of resources and capacity to implement. Sharp time frames undercut efforts to reach and provide support to all teachers. It recommended C2005 in its current form be phased out and a new revised and streamlined curriculum be phased in (<http://www.polity.org.za/govdocs>, 2001). The strengthening and streamlining of C2005 took place. This is in preparation for the announcement of the new Curriculum Statement in January 2002.

2.6.Streamling of Curriculum 2005

South African pupils would experience the new revised Curriculum 2005 within three years, that is, in 2004. The Draft National Statement was released by the Minister of Education, Kader Asmal, on 30 July 2001 (The Mercury 2001. July 31:2). It has been released for public comment until 12 October 2001. Thereafter, the draft of the National Curriculum Statement will be revised and finalised before the end of 2001 (A: \draft revised national curriculu.htm: 2001). The statement sets guidelines for teachers about what subjects to teach, for how long, at what grades, and how to assess pupils. According to the Minister "This curriculum lays the basis for ensuring that no person will leave school at the end of Grade 9 unable to read, write, and count and think at a high level ." The new revised curriculum would be implemented in three phases:

- Grade R (pre-school)1, 2 and 3 in 2004
- Grade 4, 5 and 6 in 2005
- Grade 7, 8, and 9 in 2006,2007 and 2008 respectively (The Mercury 2001. July 31:2).

It is not clear what will happen to pupils after completing Grade 9 in 2008, as there are no arrangements for the curriculum to be implemented in grades 10, 11 and 12. Mr. Thami Mseleku, the department's director-general, said that there were plans to develop a curriculum for these grades (The Mercury, August 2. 2001:9). The 'new curriculum' has been met with slight scepticism by the Association of Professional Educators of KZN. The president of the association says the proposed model requires dedicated staff and resources and that was one of the reasons why the previous curriculum failed. Mr.Maharaj felt that more work needs to be done and implementation must be well co-ordinated by the national education ministry. Overall the language and terminology was simpler. Mr.Ndaba Gcwasbaza, spokesman for the South African Democratic Teachers' Union, welcomed the draft curriculum but said that regular reviews needed to be done to ensure it remained relevant (The Mercury, August 2. 2001: 9).

From 2002, teachers will be orientated with the new curriculum and textbooks. Other learning material would be developed in 2004 (The Mercury, July 31. 2001:2). It is essential to be informed about the Revised National Curriculum Statement.

2.7. Revised National Curriculum Statement for Grade R-9

The aim was to develop a National Curriculum Statement that was clear and dealt in simple language with curriculum requirements at various levels and phases. It also had to address curriculum overload and give a clear description of the kind of learner in terms of knowledge, skills, values and attitudes expected at the end of the GET band (A: \draft revised national curriculum.htm: 2001:11). The challenge is how the goals and values of social justice, equity and democracy can be infused across the curriculum. It is therefore essential to review what comprises the revised curriculum.

2.7.1. Revised curriculum

In the revised curriculum, content is emphasised. It recognises that OBE considers the process of learning as being as important as content. Method and content are emphasised by stating the outcomes to be achieved at the end of the teaching and learning process. It identifies the goals, expectations and outcomes to be achieved through related assessment standards. It specifies knowledge, skills and values to be achieved but does not specify the facts to be learnt in a narrow syllabus. It however, promotes activity-based methods of teaching and learning (A: \draft revised national curriculum.htm: 2001:18).

The achievement of balance between integration and progression is central to this curriculum. Integration is achieved within and across Learning Areas. Each Learning Area demonstrates how conceptual progression is to occur through the assessment standards. The assessment standards specify knowledge, skills, values and understanding to be achieved in each grade as well from one grade to another (A: \draft revised national curriculum.htm: 2001:19). The learning outcomes describes what (knowledge, information, skills, attitudes and values) learners should know and be able to do at the end of the grade. The set of learning outcomes ensures integration and progression in the development of concepts, skills and values through the assessment standards. Assessment standards describe the achievement level of the learning outcome (A: \draft revised national curriculum.htm: 2001:22). The General Education and Training Certificate will be awarded on the basis of the learner's demonstrated ability in the learning outcomes (A: \draft revised national curriculum.htm: 2001:25). It is interesting to identify the elements of the streamlined curriculum.

2.7.2. Elements of a streamlined Curriculum 2005

- The eight design features of C2005 (Critical outcomes, Specific outcomes, Assessment criteria, Range statements, Performance indicators, Expected levels of performance, Phase organisers and Programme organisers) were reduced to three. These are the Critical Outcomes, Learning outcomes and assessment standards (A:\draft revised national curriculum.htm: 2001:39).
- the final section of each Learning Area Statement assists teachers in the management of assessment. However, the number of Learning Areas for the senior phase remains eight.
- There is a balance between emphasis on integration and conceptual progression. Different Learning Areas deal with integration in the best way suited to the discipline. Some make links between the classroom and everyday life. Others make Learning Area links or theory / practice integration within the same learning area.
- The approach to integration has varied but there is clear progression from grade to grade. All Learning Areas require some emphasis on the same issues from year to year but also should show conceptual progression. Each Learning Area Statement follows a format which organises minimum concepts, skills and values and show how integration and grade progression will be achieved from grade R-9 (A:\draft revised national curriculum.htm: 2001:40). Since this study concentrated on the Learning Area MLMMS, there is a need to refer to its outcomes in the draft revised statement .

2.7.3. Mathematics as a Learning Area

In this section, the Mathematics Learning Area is discussed given its focus in this study. It is recognised that mathematics has its own specialised language that uses symbols and notations for describing numerical, geometric and graphic relations. However, deliberate attempts must be made to incorporate contexts that build awareness of human rights,

social, economic and environmental issues relevant and appropriate to learner's realities (A: \draft revised national curriculu.htm: 2001:47). The mathematical learning outcomes are as follows:

- Number operations and relationships - The learner is able to recognise, describe and represent numbers and their relationships; and counts, estimates, calculates and checks with competence and confidence in solving problems.
- Patterns, functions and algebra -The learner is able to recognise, describe and represent patterns and relationships, and solves problems using algebraic language and skills.
- Space and shape - The learner is able to describe and represent characteristics and relationships between 2-D shapes and 3-D objects in a variety of orientations and positions.
- Measurement - The learner is able to use appropriate measuring units, instruments and formulae in a variety of contexts.
- Data handling - The learner is able to collect, summarise, display and critically analyse data to draw conclusions and make predictions, and to interpret and determine chance variation (A: \draft revised national curriculu.htm: 2001:50).

It is important to note the key issues that would be addressed in the implementation of the Revised National Curriculum.

2.7.4.Implementing the Draft Revised National Curriculum

In the implementation of the draft revised curriculum the following key issues would be addressed :

- support material-the creation of a National Quality Assurance list of learning support materials should result in better quality and cost effective support materials.
- guidelines for the development of learning support material for publishers and material developers will assist in aligning learning support materials with curriculum requirements.

- there would be training of teachers in the effective use of learning support materials (A: \draft revised national curriculu.htm: 2001:80).
- Teacher orientation - Prof.Asmal said that the major criticism of Curriculum 2005 was quality and duration of teacher training. As a result, the focus would be between teacher education for the long term and orientation for the short term. The financial implications of the new curriculum is still to be discussed (Mercury, July 31. 2001:2).

There would be immediate orientation to the new curriculum and the long-term professional development of teachers. There will be a cadre of trainers at national and provincial levels who will use a training transfer model to orientate teachers, principals, and district-based personnel to the revised curriculum statements. The professional development of teachers which focuses on level and depth of knowledge, skills and values as well as resources and assessment strategies are to be used in each Learning Area. There would be redirection of training of teachers in those Learning Areas where there is a shortage of teachers (A: \draft revised national curriculu.htm: 2001:81). There is already a National strategy in place to boost mathematics and science in schools. More than a 100 schools throughout the country had been identified to start the project, with emphasis being placed on increasing the participation and performance of girls in both disciplines. The department also announced that it planned to upgrade the skills of underqualified, mathematics and science teachers (The Mercury, 2001. June 25: 2). Furthermore there would be accreditation of short and long term professional development to support the curriculum (A: \draft revised national curriculu.htm: 2001:81).

2.8. Conclusion

In this section of the study, the focus was on literature that dealt with C2005 and OBE. A review of C2005 was provided and its main characteristics described. Aspects of teacher-centred education and learner-centred education were also examined. The need for a reconceptualised curriculum and its link to OBE was demonstrated. Furthermore, the

problems encountered with C2005 and the findings and recommendations of the Review Committee were also presented. Finally, the draft revised curriculum was discussed with the focus on streamlining curriculum 2005. In discussing the policy, it is clear that C2005 is embedded in the notion of integration.

In the section that follows, the findings, analysis and the significance of the study are presented.

PART THREE

FINDINGS, ANALYSIS AND SIGNIFICANCE

3.0. Introduction

In the previous section of the study, a selected literature review of the education policy was presented. This section sets out to interpret the data collected from the interviews. The information would assist in understanding the response of educators to "across the curriculum teaching" and OBE implementation in South Africa. After the profile, the findings focus firstly on the issue of content and its relevance to MLMMS. Secondly, the need for proper training on how to integrate across the curriculum is highlighted and thirdly, educators views on the role of assessment in OBE is also analysed. The analysis and significance of these aspects would assist in understanding the response of educators to "across the curriculum" teaching.

3.1. Analysis of findings: educator interview

In response to the Critical question: How are the educators responding to the adjustment to teaching across the curriculum with specific reference to the Learning Area MLMMS, the following findings are presented:

3.1.1. Profile of sample(Q1, 2)

Question 1 and 2 required responses on teaching experience and specialist field of teaching. Table 3.1 indicates the response of educators to this question.

Table 3.1: Educators years of service & Specialist field

Teacher	Teaching Experience	Specialist Field
A	16 years	Music & English
B	14 years	English & Afrikaans

3.1.2.Adjustment from specialist teaching to across the curriculum (Q3)

Regarding question 3 and the problems in making the adjustment from specialist teaching to across the curriculum teaching, Teacher A indicated that the problem that she encountered with across the curriculum teaching was the content. There was a knowledge deficit in certain Learning Areas and this made her feel insecure. These Learning Areas were identified as Maths, Science and Technology. She relied on peer assistance. Initially there was a sharing of the Learning Areas so she depended on the assistance from her peer who knew more about the Learning Area but the move to individual teaching of Maths and Science was daunting. A frightening Learning Area for the educator was Technology, since she did not know where to begin. Some concepts covered in Maths, Science and Technology are closely related. She had to read up the relevant content material so that she had sufficient knowledge to enable her to be a skilled, professional teacher.

Content knowledge is not mentioned in C2005 policy documents. This is largely because C2005 designers, in line with OBE philosophy, have not prescribed content. This can allow teachers to think that curriculum is not content based and that any content is fine. This compromises range, depth and quality of learning in all learning areas. Some fields like science and mathematics are especially dependent on the selection and sequencing of content. This concern about content knowledge has also been revealed quite clearly by the educator in the study. Attempts to write outcomes for these Learning Areas without content would mean underspecifying them. ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

With the current under-specification of content in C2005, teachers are frequently at a loss as to what should be taught and when. The result is unnecessary repetition of ground already covered rather than conceptual development and progression. The interviews conducted by the C2005 review committee have indicated that what is to be taught is unspecified and the level at which it is to be assessed is not clear ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). This was also clear in the interview with Teacher A.

Teacher B on the otherhand felt confident about content but was troubled by methodology in Maths and Science. The educator had to get used to the drill session at

the beginning of Maths lessons. In science, the problem was largely conducting experiments. Although the educator had done science in Matric, the teaching of it was slightly difficult. Teacher A's problems were also compounded by not really knowing the methodology to use in the teaching of MLMMS. Teacher A also experienced the language barrier in implementing OBE as reflected in the following statement :

And then although you can say OBE is like well for them to experience it I felt our children couldn't cope with that because we were having that language barrier and the texts were a bit difficult for them so like we had to do a lot of classroom teaching and because of that I had to know my content. We did do reading, I did feel a bit inadequate in the classroom context .

Table 3.2: Profile of home language for Grade 7 pupils

GRADE 7	PUPILS						
YEAR	LANGUAGE						
	English	Isixhosa	Isizulu	Sesotho	Total	% Eng	% 2nd Language
1997	53		41		94	56.4	43.6
1998	60		59	1	120	50	50
1999	50		66		116	43.1	56.9
2000	46	3	40		89	51.7	48.3
2001	27	3	45	2	77	35	65

Source: EMIS Document (1997-2001)

Table 3.2 indicates that in 2001 sixty five percent of the learners in Grade 7 speak English as the second language. The language of teaching and learning at the school is English. The teacher therefore had to resort to a lot of classroom teaching and there was a need for the educator to know her content.

3.1.3. Problems experienced (Q 4)

With reference to question 4 and overcoming initial problems experienced in across the curriculum teaching, with Educator A, there was a period of adjustment from the time of

implementation of across the curriculum teaching. The problems encountered initially with across the curriculum teaching were overcome through trial and error. Whatever was wrong in the first year was rectified in the second. Both educators indicated that there was always consultation as to how to teach a particular Learning Area. They also spoke to teachers who were specialists in Mathematics and Science. There was ad hoc assistance from colleagues who knew more about the subject field. Both educators also relied on textbooks for content and methodology because they provided guidance as to the knowledge that the educators should have and what the learners should know. Educator A went back to the old textbooks because they provided a structured approach to teaching Mathematics and Science, as indicated by the following statement :

Just between the two of us and the use of the textbooks and then we felt that we had to discard some of the books although they were new, we had to discard them, go back to some of the old books, especially with maths, we felt that the older book was better. It gave us more direction so it meant adjusting .

C2005 demands well-resourced classrooms that include textbooks, readers, atlases, dictionaries, stationery and teaching equipment. The Review Committee found that this was lacking in many schools. Furthermore, textbooks tend to be superficial where there is artificial integration of Learning Areas. There is also limited consensus among authors about appropriate level of complexity for each grade. The under-specification of concepts and content for each grade is likely to lead to repetition of the same concepts in subsequent grades ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). The superficial and artificial nature of the new books could have resulted in Teacher A going back to old books that were more structured.

Furthermore, teachers are designing and producing their own learning programmes and learning materials. Worksheets are produced around programme organisers with scant attention being given to progression of content and concepts, skills, values and attitude ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

3.1.4. Teaching Specific Outcomes (Q5)

Regarding question 5 and the problems related to the teaching of Specific Outcomes in

the Learning Area MLMMS, Educator A indicated that SO2, which dealt with mathematical sciences was ignored while both educators indicated that SO3, dealing with historical development in various social and cultural contexts, was not emphasised. Educator B went on to explain that we don't really know much about how maths developed in different cultures and societies since textbooks seldom dealt with this. This shift from mathematics ideology of numbers and figures to ethnomathematics seems to be problematic to the educators. Educator B, however found this section interesting but was unable to introduce the fun part of maths because there were too many things to concentrate on.

Educator A indicated that

Manipulate numbers and number patterns in different ways, SO 4-Critically analyse how numerical relationships are used in social, political and economic relations, SO 5 measure with competence and confidence in a variety of contexts, were done to a certain extent. But SO 6 -Use data from various contexts to make informed judgements was not adequately achieved, since learners could not, make informed judgements.

Learners are shown what to do and they copy it, therefore, the SO is not achieved. One has to question whether learners and educators are ready for certain aspects of OBE.

The Review Committee findings also indicated that teacher understanding of C2005 is generally weak and there is a gap between what teachers say they know and what they actually do. The findings were obtained through group interviews, classroom visits and questionnaires. The teachers described the essential features as classroom arrangement, such as group work and learner centred activities, where the teacher plays the role of facilitator ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). Yet many learners still do not participate fully in the learning process since teachers are providing a great deal of direct instruction and are pre-occupied with content coverage. This was also revealed in the study.

Furthermore, educators are indicating the SOs and ACs (Assessment Criteria) in the lesson preparation but they have no idea as to whether they have been achieved. The problem of assessment in OBE has to be clarified. This reflects on whether educators

have been adequately trained to implement all aspects of OBE. Assessment is internal and formative, therefore, there are no external standards. Outcomes are designed at phase level rather than grade level. Therefore, there is no grade-based benchmarks against which to assess learner performance. This leads to outcomes being addressed in a superficial and fragmented way ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). This aspect is clearly revealed in the interview conducted in this study.

3.1.5. Teacher preparation for MLMMS (Q6, 9, 10)

In respect of Question 6, the need for extra preparation for the teaching of MLMMS, educator A, indicated that extra preparation is needed as compared to music. If the subject matter is not read then the educator feels inadequate. Grade 7 mathematics is difficult and the educator herself is grappling with the content. Preparation requires twenty to thirty minutes of reading since there are so many Learning Areas to concentrate on. The problem with teaching MLMMS is further compounded by classroom based teaching which the educator is confronted with. The educators desperate attempt at preparation for MLMMS is further illustrated in the following statement :

Sometimes what I do is read the entire section before we tackle it and
*then I read each exercise like the method to each exercise before going into the
 class so that would take up 5 to 10 minutes (Educator A).*

Educator B on the otherhand seemed more confident with content but was concerned with methodology. This educator did indicate that she had taught Mathematics previously at Junior Secondary level. However, she also utilised extra preparation time in consulting textbooks.

With reference to Question 9, and preparation for across the curriculum teaching by attending workshops, both educators indicated that they attended a workshop at the Chatsworth Teachers Centre in October, 1999. They felt that the workshops were idealistic since it was thought that there would be need for little content. The educators have a good understanding of OBE since they state that OBE should be taught where the learner obtains knowledge from reading and activities but this is not done. In certain Learning Areas there is learning through discovery, in other areas, it is traditional. Both

educators were disappointed with the workshops since the emphasis was on the design of programmes in the Learning Areas and not on how to teach it. They felt that the facilitators were not able to give them answers on assessment and they were told to feel their way through and settle on what worked for them.

The training model that the facilitators used was referred to as the Cascade Model ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001). The Cascade Model has been criticised as inadequate for delivering satisfactory training. It failed to prepare officials or school-based educators for the complexity of C2005 and its implementation. The cascading of information resulted in the watering down or misinterpretation of crucial information. Trainers also lacked confidence, knowledge and understanding to manage the training process ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001).

The District officials who conducted the training were criticised for not understanding the terminology themselves. Training also created the misconception that textbooks and content knowledge were no longer necessary in the new paradigm, as indicated by the teachers in the interview. The Khulisa study 2000 as cited in ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001), found that the training was too short and there was insufficient hands-on training. Interviews in KwaZulu-Natal(KZN) schools as cited in ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001), refers to the perception created that 'anything goes'. Many teachers appear to have left the training workshops not knowing what it was they ought to teach. This is also revealed by the teachers in the study conducted. This dilemma was also faced by two teachers, David and Gloria, at an ex-DET (Department of Education and Training) senior primary school in Pietermaritzburg. They attended an OBE workshop for Grade 7 teachers and had to provide a workshop at their school. They had learned the basic terminology and the principles and framework of the new system. They brought back some reading material and posters but they encountered two problems with presenting a workshop. Firstly, they not really understand OBE, and secondly, they did not know how to orientate the whole school towards OBE (Parker, 1997:18).

Interviews with KZN teachers as cited in ([Http://www.polity.org.za/govdocs](http://www.polity.org.za/govdocs), 2001) revealed that teachers, after the initial training, were left to either sink or swim. There were no support structures in place to help teachers deal with the pressures of classroom implementation .

When questioned about additional workshops for MLMMS (Question 10), both educators indicated that there were no additional workshops for MLMMS, or any of the other Learning Areas. There was only a general feedback workshop which angered the educators. The educators wanted to know about recording and assessment, but were set tasks that were similar to those accomplished in the previous workshop.

3.1.6. Confidence rating (Q7)

With reference to Question 7 and confidence rating in teaching of MLMMS, educator A rated herself as six because Maths is being taught for the third year in the same grade. This seems to indicate that teaching for several years in a particular grade increases the competency of the teacher. The following statement by Educator A reiterates this aspect:

Let me just qualify that because I've been teaching it for the third year but if it was the first year, I would have given myself a four but because now it's like the third year that I'm doing Grade 7 maths it's becoming easier. With each year it's becoming easier. So maybe like I'm becoming a specialist because of the fact that I've got that grade for such a long time.

Educator B, on the otherhand, rated her confidence level as 8 since she enjoyed teaching mathematics and aspects like problem solving and geometry. But, she did indicate that although the emphasis is on OBE, the school policy is to go back to basics, therefore it is still rigid. She would have liked the freedom to show the fun part of maths but she has a good grasp of the various concepts she teaches. The difference between Educator A and B is that educator B had taught maths at Junior secondary level and is therefore confident in this Learning Area. Both educators appear to enjoy teaching MLMMS but they lack the necessary training.

3.1.7. Impact of across the curriculum teaching (Q8, 11, 12)

Question 8 required a response to the impact of across the curriculum teaching on teaching style. Educator A responded that she is not enthusiastic about teaching, since there is so much of preparation for each Learning Area, and is therefore not able to look

for anything extra. In the specialist area, there was a passion for teaching, since the educator knew the areas to concentrate on, and the activities pupils would enjoy. Now she questions whether she is a good teacher if the children did not enjoy the lesson. Across the curriculum teaching seems to be shaping the feelings of discontent. Educator B looked at the parallels between the specialist field of English and MLMMS. The change was not drastic since, in English, various aspects were taught using different approaches and this could be applied to MLMMS.

With Question 11, educators were asked about the benefits of specialist teaching. Both educators advocate specialist teaching since the specialist educator is able to provide the best classroom atmosphere and the children enjoy the lesson. A Specialist knows how to approach a subject and how to remedy problems. The specialist has a flair for and insight of the subject. A non specialist may employ methods that are not conducive to OBE, for example, lecture method due to feelings of insecurity because of a lack of content.

Regarding the benefit of "across the curriculum teaching", in Question 12, Educator A felt that if there is continuity in teaching in the same grade, then there would not be the problem of grappling with content. This would avoid a frustrating situation for educator and learner, and this would then benefit across the curriculum teaching. If the teacher is allowed to teach in a grade for three years or more, then it would be like becoming a specialist, and it would be beneficial. It would not frustrate educators and learners.

Educator B also makes an open acknowledgement of across the curriculum teaching by stating that there is a special bond with the teacher. The teacher is not stagnating in one field. The perception held previously that Mathematics and Science teachers are separate from the other subject fields, is avoided.

3.1.8. Suggestions for non specialists (Q13)

Finally, with Question 13, educators were required to provide suggestions to assist non-specialists in MLMMS. Educator A strongly believed that in-service training would help non-specialists. This would then lead to enthusiasm on the part of educators in

teaching MLMMS. This is indicated in the following statement by Educator A:

I think there should be some in-service training. Workshops should be conducted. Teachers should be allowed to go and to be properly trained and come back. Maybe, teachers would enjoy teaching these Learning Areas because I definitely enjoy maths, when I read it I'm thrilled with it. I say why didn't I teach it all these years. It's just that sometimes I feel a bit insecure as to how to go about it. So if there was in-service training I'd enjoy teaching it.

Educator A is also of the opinion that meetings between MLMMS educators would assist educators that are encountering problems. This would invite educators to share experiences. Educator B advocates approaching other people who have expertise in the subject. They would offer assistance in methodology and time management. Advice on slotting in aspects like drillwork, geometry, bonds and tables could be given.

3.2. Conclusion

In summarising the findings four broad categories emerge. Firstly, the type of training surfaced frequently. The educators were generally concerned about the type of training they had received. It was felt that the facilitators had not really assisted them with the implementation of "across the curriculum teaching." Educators emerged from workshops feeling that they were left to their own devices, to work through trial and error. This does not assist with uplifting the confidence of educators, especially, if they are teaching a Learning Area that they are not familiar with.

Secondly, educators had the misconception that, content would not really matter in the teaching of OBE emerged. One educator in particular was really at a loss when it came to content. She realised that content was integral to the teaching of MLMMS. With across the curriculum teaching, integration is important, but when the educator has to prepare content then integration is left aside. The educator had to refer to books and colleagues who were familiar with content to assist with the Learning Area. The other educator was concerned about methodology in the Learning Area. This indicates that to have confident educators in the class, sufficient training in the particular Learning Area and resource material needs to be provided, so that the process of education can continue.

Educators felt inadequate because they lacked content knowledge, and therefore felt that specialist teaching was good, since they knew the content and methodology well. However, the educators were quite content with teaching the Learning Area MLMMS since it was interesting and posed a challenge to them.

Thirdly, regarding the perceived notion that educators generally experience a problem with the teaching of MLMMS and would rather leave this Learning Area to the specialist, the study indicated that although MLMMS is a difficult Learning Area to teach, if given the necessary guidance and resources, the educators enjoyed teaching it. Furthermore, the educators indicated that the longer they taught the Learning Area, the more familiar they became with content, and this made it easier to teach.

Fourthly, educators raised concerns about how one measures whether the Specific Outcomes have been achieved. They had little or no guidance from facilitators and Management regarding assessment. The educators were left to their own devices and indicated the completion of specific outcomes according to their own standards set.

In the next section, recommendations are made based on the findings, and a conclusion regarding "across the curriculum teaching" is postulated.

PART FOUR

RECOMMENDATIONS AND CONCLUSION

4.0. Introduction

The previous section highlighted the findings and significance regarding the responses of educators to across the curriculum teaching. It seems that educators are really concerned about the teaching of content in certain Learning Areas, the need for training and workshops and being able to assess learners on certain identified standards and criteria. Arising from the findings, the following recommendations can be made .

4.1. Recommendations:

These recommendations are shaped around the following:

- inservice training and workshops for educators
- resource material for content
- assessment of learner activities

4.1. In-service training and workshops

It is necessary for educators to be constantly provided with support through in-service training. In-service training should be provided by people who know what to train educators in, so that they leave training centres equipped to educate the learners. Furthermore, workshops that offer practical guidance and 'hands-on' experiences are necessary. Since integration / across the curriculum teaching is the basis of OBE, the in-service training /workshops should immediately focus on this key issue.

The draft revised curriculum addresses this issue of training. The Cascade model, in its new guise, is referred to as the transfer model. It would be used to orientate teachers to the Revised National Curriculum Statement. It is also envisaged that higher education institutions, teacher unions and non-governmental organisations would be involved in

the professional development of teachers. There is mention of accreditation of short and long term professional development to support the curriculum, but there are no clear indications as to how this would be achieved (A: \draft revised national curriculu.htm: 2001:81).

4.2. Resource materials for content

Resource materials need to be highlighted on the provisions list for OBE. Educators need to be provided with source material that is not superficial on integration, rather, it should show depth and progression. The way to achieve this is to stress that content is important and provide guidelines concerning required standards to publishers. The present integration with themes is acceptable but emphasis needs to be placed on the depth and progression of the content covered.

Regarding this aspect in the draft revised curriculum national statement, there would be a national quality assurance list of learning support materials, guidelines for the development of learning support materials for publishers and national structures for budgeting to ensure effective delivery (A: \draft revised national curriculu.htm: 2001:80). It is good that the aspects of quality of resource materials and the standards for the development of materials would be addressed, but, it is unclear as to what the budget allocation would be like to ensure its implementation. As indicated previously C2005 was faced with a major problem due to budgetary constraints. It is hoped that the budget issue is adequately resolved before the implementation of the revised curriculum.

4.3. Assessment

There needs to be some standard of assessment to be considered for each grade and not phase. Educators need to be adequately trained in the methods of assessment. If assessment is grade based, then, it would assist educators in identifying what outcomes need to be achieved in the grade. Standards can be maintained because educators would be confident that the outcomes have been achieved.

With reference to the draft revised national curriculum statement, there would be guidelines on assessment standards that educators would refer to. They state the requirements and expectations of learners by grade and is seen as the minimum or

essential knowledge, values and skills to be covered. They indicate what is essential for progress through the system and are designed down from the Grade 9 requirements (A: \draft revised national curriculum.htm: 2001:21).

4.4. CONCLUSION

C2005 was indeed a dramatic paradigm shift in the education system of South Africa. As with any thing that is new, it would be met with scepticism and hopefully follow through a period of growth and development. It is interesting to note that C2005 highlighted the importance and relevance of what is learnt to both the child and the country. The establishment of the NQF has brought with it hope for people who were disadvantaged under the previous government. Those that possess the necessary skills are now accorded the recognition that they so rightfully deserve.

Across the curriculum teaching, has encouraged educators to see the value of integration, but at the same time, one has to be aware that not every Learning Area would lend itself skilfully to integration. The focus should be to integrate as far as possible but not to neglect the key concepts for each Learning Area, especially mathematics. To assist educators, sufficient resource material needs to be provided so that educators are not faced with the problem of how to implement integration. Furthermore, the assessment of the outcomes for the Learning Areas would not be clearly demarcated, as with the previous education system. Educators would need adequate training to make assessments across the curriculum and maintain consistency in standards. This invariably focuses on good training and provision of workshops for educators. C2005, if implemented, in its streamlined version should see educators more confident in accepting its challenges and merits.

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APPENDIX 1

STRUCTURED INTERVIEW SCHEDULE

Profile :

1. How many years have you been teaching ?
2. What is your specialist field ?

Problems:

3. Did you encounter any problems in making the adjustment from specialist teaching to across the curriculum teaching ? If, yes, explain.
4. How did you overcome these problems in your teaching?
5. Regarding the Learning Area MLMMS, there are several Specific Outcomes(SOs), did you encounter any problems teaching them? If yes, elaborate.

Preparation:

6. Is there a need for you to make any extra preparation for the teaching of MLMMS as compared to your specialist field? If yes, elaborate.
7. On a scale of 1-10 rate your confidence in teaching MLMMS as compared to teaching in your specialist field.

Teaching impact:

8. In what way (s) did the adjustment from specialist teaching to across the curriculum teaching impact on your teaching in the classroom?
9. Concerning across the curriculum teaching, did you attend any workshops to prepare you? If yes, elaborate.

Training:

10. With specific reference to MLMMS, did you attend any workshops ?

Curriculum benefits:

11. Are there any benefits of specialist teaching ? Elaborate .
12. Are there any benefits of across the curriculum teaching ? Elaborate.

General:

13. Do you have any suggestions to assist educators who are not specialists in the field of MLMMS? If yes, elaborate.

APPENDIX 2

STRUCTURED INTERVIEW QUESTIONS :

TEACHER A

DATE: 24-04-2001

Interviewer: Thank you Mrs. Govender for volunteering your time and taking part in this interview. ah remember everything would be confidential, and please feel free to answer as you wish.

Educator: You're welcome.

Interviewer : Looking at the first question - how many years have you been teaching ?

Educator : Okay I've finished 16 years, so this is my 17th year.

Interviewer: What is your specialist field of teaching ?

Educator: Music and English

Interviewer: Okay. Now, if you recall from the year 2000, there's been a switch over to across the curriculum teaching. Right, did you encounter any problems in making that adjustment from specialist teaching to across the curriculum teaching ?

Educator: Yes there were a few problems

Interviewer : All right, now if you did encounter some, could you please give us some details about whether your concern was teaching of the content, or was it personally feeling inadequate because you needed to make this adjustment, or was it something concerning the classroom problems?- you know, setting up this classroom to suit (OBE) Outcomes Based Education ?

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Educator: I think it was more content and from a personal point of view I was feeling a bit inadequate in certain Learning Areas.

Interviewer: In particular, which were your Learning Areas that made you feel inadequate?

Educator: I can say Maths and Science, because Science I've only been teaching for the latter part of last year. We've been sharing the Learning Areas, and I had a bit of a problem with those two Learning Areas .

Interviewer: with those two Learning Areas.

Educator: Also Technology. I didn't know where to begin with Technology because I was also sharing that Learning Area.

Interviewer: All right, and so with the content, where specifically did you experience a problem?

Educator: I felt I had to do a lot of reading before going into the classroom. And even though I had done reading beforehand, I didn't feel like comfortable teaching it, and I didn't really know the method I should employ you know teaching it.

Interviewer: In teaching that particular Learning Area?

Educator: And then, although you can say OBE is like well for them to experience it, I .. I .. felt our children couldn't cope with that because we were having that language barrier and the texts were a bit difficult for them, so like we had to do a lot of classroom teaching and because of that I had to know my content. We did do reading, I did feel a bit inadequate in the classroom context .

4. Interviewer: All right. Now I am sure you would have had this period to adjust from the year 2000 and these problems that you had encountered initially did, how did you try to overcome them ? Just give us some details. Elaborate.

Educator: By trial and error. Whatever we'd done wrong, well I am talking about

working with mam, whatever we'd done wrong in the first year, well we rectified it in the second year. And there was always this consultation between us as to how we would go about teaching these particular areas.

Interviewer: So it was just consultation between the two of you ?

Educator: Just between the two of us and the use of the textbooks, and then we felt that we had to discard some of the books although they were new, we had to discard them, go back to some of the old books. Especially, with maths, we felt that the older book was better. It gave us more direction so it meant adjusting .

Interviewer: Did you get any outside assistance?

Educator: Noo we went to workshops which were not fruitful at all.

Interviewer: so, but within your school environment, did you ah .. get any form of assistance? from any of the other educators, your colleagues?

Educator: Yes, other colleagues. Like with maths I asked Mrs Moodley because we had taught maths prior to that OBE period. I taught maths with her, so I always fall back on her methods whenever I'm .. you know stuck.

Interviewer: So you had, you did consult.

Educator : I consulted.

Interviewer : because she was, she had more knowledge?

Educator : yes somebody who had more knowledge, I had to go to them and say how would you teach this, do you remember this and ..

5. Interviewer: All right. Now if you are looking at your Learning Area MLMMS (Mathematics Literacy, Mathematics and Mathematics Sciences), there are several SOs there, ah . . do you have any problems with teaching of any of those SOs, have you encountered any problems with achieving those SOs? or the way in which the children

reacted when you had to present certain information in those particular areas?

Educator: Like certain of the SOs, we've not really tackled, even if we tackled it was so basic because we felt that some of the things were beyond our children.

Interviewer : could you please give us some examples of those SOs.

Educator: Like for the ah.. like the mathematical sciences part of it, we've ignored that to a certain extent, I would say because we felt it was a bit beyond the children. It's just like working with numbers SO1 . 2 , 3 . . not even SO3, SO3 is historical development, we haven't emphasised that. SOs 1 ,2 ,4 and 5, we've done to a certain extent . SO 6, where you have to make informed judgements, I think ah .. children still can't come to grips with that so I didn't feel like I have achieved because I have to teach them. I have to virtually show them how to do it and they copy. Like if I have to give them to see if they have achieved that SO, I don't think it will be like ah ..at achieved that point.

Interviewer : So those were the areas that were a problem.

Educator: like I would say when we are preparing our lessons, we do state that it's SO9, AC 1, but as to whether these children have actually achieved these SOs we cannot say because when we give them a test, it's still the same things that they perform badly in and it is those areas, that we haven't been like tackling .

Interviewer: All right. Before you go into your teaching of a particular Learning Area like MLMMS, is there a need for you to make extra preparation, to prepare yourself for that particular Learning Area, before you actually go into the class to teach it, as compared to let's say previously when you taught music?

Educator: yes, I have to. I feel inadequate if I don't have my resources, and if I haven't read up my material beforehand I feel I don't know the subject. Sometimes with Grade 7 maths, it's difficult and I have to grapple with it and then if I don't know how to explain it properly, maybe my explanation is not making sense to them, I'm not explaining it correctly. I have to do a lot of reading before I go into the class, and even then to, I am not sure enough myself when I'm explaining because method is different, understanding it yourself and methodology is two different things.

Interviewer: so if you are looking at your preparation time, for MLMMS, prior to actually teaching it, approximately how long, how many minutes or so would you have to actually go and do the read up and preparation for it ?

Educator: I'm being truthful in saying that I only do about 15 to 20 minutes because you know, we don't have the time, there's so many learning areas and ah .. so I take about 15 to 20 minutes to read that section .

Interviewer: but you do read up prior to teaching it ?

7. Interviewer: Thank you. Now on a scale of 1-10, how would you rate your confidence in teaching MLMMS as compared to teaching in your specialist field?

Educator: I'd say 6

Interviewer: You'd rate it as 6?

Educator: I'd rate it as 6

Interviewer: Thank you. In what way ...

Educator : Let me just ah ...qualify, that because I've been teaching it for the third year but if it was the first year, I would have given myself a four but because now it's like the third year that I'm doing Grade 7 maths its becoming easier. With each year its becoming easier. So maybe like I'm becoming a specialist because of the fact that I've got that grade for such a long time.

Interviewer: Okay

Educator: right

8. Interviewer: Thank you. In what way or ways, did the adjustment from specialist teaching to across the curriculum teaching impact on your actual teaching style in the classroom?

Educator: I think I haven't become ah..I'm not such an enthusiastic teacher anymore because there's so much of preparation to be done. I teach each subject like just content, get the content over and done with and finished, it's finished for that Learning Area. I can't look for the extras that would make it interesting for the children.

Interviewer: So you would say in your specialist area, you had the passion?

Educator: I had that passion and I knew which areas to concentrate on, which .. what would like activities would make the children excited and I could really go. Here I have to go by my everyday, how the lesson goes what do the children feel. There are sometimes when I feel I've taught this lesson, um.. did the children enjoy it, I don't think I'm a good teacher because I don't think they enjoyed it, they were bored, they were too quiet, they didn't respond. So you now there are sometimes when I feel like that.

9. Interviewer: ah.. concerning your across the curriculum teaching, have you attended any workshops to prepare you for this ? and if yes, if you have attended workshops to prepare you for across the curriculum teaching, where was it held, who conducted it and what was achieved?

Educator: the only workshop we had, was the year we had to implement OBE. It was a general workshop for all Learning Areas and I suppose they were idealistic too. They were thinking that OBE was going to be taught the way OBE should be taught and there was going to be very little content and eh..

Interviewer: If I could just interrupt ..How is OBE how or you think OBE should be taught?

Educator: I think it should be ..I mean we don't eh eh ...put knowledge into the child, the child is supposed to gain this knowledge from his reading, from his activities and whatever but that's not how we are doing it. We are teaching the child the content, because they cannot cope with eh...It's more like a transitional there are certain things we are allowing them to learn in certain Learning Areas and in other Learning Areas we are doing it the traditional way .

Interviewer: Traditional, so you are combining the both ?

Educator: We are combining both yeah. This workshop was held, that we went to at Teachers' Centre. It was a very long workshop. We spent about two days on each Learning Area. We were gone for a long period of time.

Interviewer: From what time to what time was this eh .. workshop conducted?

Educator: I haven't got the exact date, but I think virtually the whole of October .

Interviewer: And at what time did you start?

Educator: We started at eight and we finished at about half past two and sometimes at two.

Interviewer: And who conducted these workshops?

Educator: ah..well mostly level 1 teachers who were trained to be facilitators of this OBE course. So it was like more or less our colleagues.

Interviewer: And what was actually achieved by attending it ?

Educator: I don't think much, because what we had done there, was we had gone and we had brainstormed all these SOs and we had done learning programmes. The only thing we learnt, was how to design a programme for a Learning Area but the actual manner in which we go about teaching these lessons, we weren't given any guidance on that .

10. Interviewer: Okay. With specific reference to MLMMS, did you attend any workshop in that Learning Area ? Aside from your general across the curriculum workshop ?

Educator: yes, besides the general OBE ?

Interviewer : the general one that you attended ?

Educator : no no eh.. workshops in MLMMS.

Interviewer : so after that period of time -that you attended for approximately a month after that there was no particular workshop that was organised for this Learning Area MLMMS?

Educator: none of the areas .

Interviewer : none of the areas .

Educator : there was a general feedback workshop and that workshop angered lots of teachers because we had gone there to find out more about recording and assessments and when we arrived there, we were given more work of the same nature that we had done during the initial workshop.

Interviewer: so it wasn't fruitful to you ?

Educator: it wasn't fruitful .

Interviewer: and when was that ?

Educator: that was in March 2000.

Interviewer: eh.. next question. In your opinion, are there any benefits of specialist teaching ?

Educator: yes .

Interviewer: eh..if you could just elaborate ?

Educator: it..it will be like whatever I've been saying from the beginning, whatever I find fault in my teaching in these non-specialised areas, a specialist teacher would know the subject so well, they would be able to get the best. Right the classroom atmosphere would be the best, the children would get the best. They would know ah.. they would probably enjoy the lessons much more than with the teacher who is not a specialist.

12. Interviewer: Right. So in your opinion then, are there any benefits of across the curriculum teaching now that you've been doing it for approximately two years ?

Educator: I think if we carry on teaching across the curriculum in a particular grade for about three years or more, it will be like we've become specialists -and then it will be very beneficial but if we are gonna hop and change grade and we are going to be learning to grapple with content every year, then it's not going to be beneficial because we are learning and the children are learning and its like it will be eh.. eh..frustrating situation for the learner and facilitator .

13. Interviewer: Do you have any suggestions to assist educators who are not specialists in the field of MLMMS, since you have now taught it for this two years ?

Educator: I think there should be some in-service training. Workshops should be conducted. Teachers should be allowed to go and to be properly trained and come back. Maybe, teachers would enjoy teaching these Learning Areas because I definitely enjoy maths, I enjoy it, when I read it I'm thrilled with it. I say why didn't I teach it all these years. It's just that sometimes, I feel a bit insecure as to how to go about it. So if there was in-service training I'd enjoy teaching it .

Interviewer: And how long you think this in-service training should go on for ?

Educator: A subject like maths, with new things coming up so often and eh.. I think it depends on the teacher. If the teacher is feeling inadequate, they should go every year for a two week period or something- and then maybe if a teacher is feeling adequate enough, maybe once every two to three years, or maybe a period of a term or something .

Interviewer: oh .thank you very much for that input. eh.. do you besides your workshop idea, do you have any other inputs to make towards assisting other educators, so that they will not encounter some of the problems that you had?

Educator: yes, if in school we could meet as maths teachers and discuss ways in which to tackle problems. We should have more workshops, although we will say like, there is no time to really have them but we should .

Interviewer : a sharing session ?

Educator: we should be sharing our ideas .

Interviewer : thank you Mrs. Govender for your time and your inputs. It was very very valuable.

Educator: Thank you very much.

STRUCTURED INTERVIEW QUESTIONS :

TEACHER B

DATE:24-04-2001

Interviewer: Good afternoon Mrs. Naidoo. Thank you very, much for volunteering your time, to be part of this interview and eh..remember you can feel free to answer as you wish.

Educator: Thank you

1.Interviewer : Now let's begin with the first question. How many years have you been teaching ?

Educator: this is my fifteenth year .

2. Interviewer: And what is your specialist field?

Educator: My specialist is English and Afrikaans for the Junior Secondary.

3. Interviewer: Oh.. Thank you and at the moment you are how many years in a primary school?

Educator: Make it nine. This would be my ninth year in a primary school.

Interviewer : Did you encounter any problems in making an adjustment from specialist teaching to across the curriculum teaching ? If you recall, we had to adjust to across the curriculum teaching in the year 2000. Did you encounter any problems ?

Educator: ah .. yes there were problems especially with eh..

Interviewer : so would you describe these problems as concerning the teaching of content, or was it you were feeling personally inadequate in teaching this, making this

adjustment to across the curriculum teaching or was it concerning classroom problems, like setting up of classroom to suite OBE ?

Educator: No I had no problem with eh.. my personal capacity. I mean I felt I was confident enough to teach the subject but what troubled me was methodology, especially in mathematics and science. I think those two subjects, are approached slightly differently and I had to get used to things like eh.. your drill session at the beginning of the maths lesson eh.mm.. in science, how to actually conduct an experiment and stuff like that. Although em.. I did science until Matric, but when it came to teaching it, it was slightly difficult. Not difficult but I had to em.. adjust myself for the subject. I think those were the two main subjects which gave me a bit of a concern.

4. Interviewer: Those particular Learning Areas ? So how did you overcome these problems that you encountered in your teaching ?

Educator: well firstly, you spoke to teachers who were specialists in maths and in science. They were very very helpful and they told us how to go about a maths lesson or a science lesson, how to develop from one particular concept and take it over to the next one. Especially in maths, I felt there was a bit of a problem because you don't really know exactly when the child has mastered a certain operation maybe that's the addition. Generally, you go onto now to subtraction or the entire class to show that they have grasped that concept and are they very very proficient in that, or to break off and continue with a new concept and maybe come back as a recap. I felt sometimes it did work because it gave children a break and they were able to like go back and not master but become a bit more confident in the way they approached certain things. So speaking to teachers helped a lot and obviously going through textbooks. Textbooks are also very helpful. I must agree with certain teachers who said, especially science textbooks eh.. where they show you like the steps, what is required of you as a teacher before you actually go into the classroom, what knowledge you should have and what the child should also be able to know by the end of a certain experiment. You work with to their level .

Interviewer: So the textbooks really helped ?

Educator: The textbooks helped a lot .

5. Interviewer: Ah.. going onto the next question : Are there any problems with teaching of SOs in the Learning Area MLMMS? If there any, could you please elaborate on which SOs either you or the pupils are experiencing some problems ?

Educator: I think SO 3 gives us a bit of problem .

Interviewer : MM.. what does it concern?

Educator : it says a historical development of mathematics in various social and cultural contexts. In maths generally we don't really talk about, we don't really know much about how maths developed in different cultures and societies and textbooks very seldom deal with these things. We always felt, maths was like something different and separate and now if we had to bring like culture and society, the historical background into maths. We do have a problem but it is very very exciting. I like to do this because um.. some reference books, and some textbooks give you ideas, eh..on how to make like a very simple calculating machine as were used in the past. But sometimes, we like have no time to actually bring that into our curriculum because you still have to concentrate on so many other things, and this like the fun part of the maths becomes a bit stifled.

6. Interviewer: Okay any other SOs mam ?

Educator : Ya there's this one here SO 8, it says analyse natural forms, cultural products and processes as representations of shapes, space and time. There also I think that is linked to 3. In fact it's very very vague. I have a problem with that. Umm.. I think what we generally just focus on when we are doing SO8 is eh.. like drawing a cube or drawing a square. Those things we link it to geometry but I think my explana... my knowledge of it, and explanations given for that SO are quite vague. But I suppose they would probably when they go into the Senior Phase ya, probably Grade 9 and after they would have greater clarity on that.

Interviewer : Okay, thank you. Is there a need for you to make any extra preparation in your teaching for MLMMS prior to your teaching ?

Educator: You mean for myself ?

Interviewer : For yourself. Do you have to prepare yourself, do you have to go back to textbooks, do you have to consult other people ?

Educator : ah.. yes, like I said methodology mostly but eh..sometimes yes, like if you have like gone a bit rusty, your understanding of it, it may have been taught differently to me when I was at school. So you go to textbooks. They give you a simpler or fresher way of approaching a certain concept. Things like ratio, percentage, you know those are a bit difficult for kids to understand, so you try to look for the simplest way to get it across.

7. Interviewer : Right. On a scale of 1 to 10, how would you rate your confidence in the teaching MLMMS as compared to teaching in your specialist field?

Educator : I would give myself an eight .

Interviewer : Oh so you're pretty good .

Educator : Not pretty good, okay modesty aside, I enjoy the maths. I enjoy the maths, I like the problem solving, the geometry but as I said before, um.. we have become, even though it's OBE, we still, you know the policy of our school was to go back to basics, so it's still a bit rigid. - but I would have liked to have had more freedom to..to show like maths more something more fun, but I think I have good grasp of the various concepts that we have to teach.

Interviewer : And initially, when you were expected to teach MLMMS, how would you have rated yourself then ?

Educator : I would have given myself the same rating .

Interviewer : So you were quite confident in this particular Learning Area ?

Educator : Yeah

Interviewer : yes

Educator : It wasn't as to my expectations. I felt eh.. and I think many of the other, my other colleague also felt that nothing new was really said because many schools and I think our school also especially had been implementing some form of OBE - in that we had been doing groupwork, and assessing children not just in content and exam papers. I think generally, we were very disappointed because it wasn't something ah... new and we had lots of questions also, and the facilitators there were not really able to give us answers, especially when it came to assessment and using the different types of approaches they had told us about. It wasn't really geared to, yeah like we had questions besides just assessment, for example, when we talk about groupwork for various topics in one Learning Area and they felt that we should just feel our way through and at the end you come to what works for you, and I think that's what has happened now. We have settled down to something which works for us.

10. Interviewer : With specific reference to MLMMS, did you attend any workshops ?

Educator : during the OBE programme yes, I had attended that two day workshop.

Interviewer : that was with your initial OBE programme. After that ?

Educator : Eh.. no

Interviewer : nothing at all, no assistance ? All right. In your opinion are there any benefits of specialist teaching ?

Educator : I would say yes.

Interviewer : What would they be ?

Educator : There would definitely be benefits, because a specialist teacher would know how to approach a subject and how to remedy any problems which a child will face, and as a specialist also, he would have that kind of flair for the subject, the insight. Like at the moment, I feel I cannot do a good job with HSS. I must admit I'm very very shaky on

that ground. I find it difficult to approach that ah.. but although I try my best though you know. If you look at like HSS, is now Geography and History so to speak. So you had your History specialist and your Geography specialist, and they knew how to tackle those fields, because they are so like content based. So when I did do History for a few years, I felt that I was like in the front, just like lecturing, and I felt it was so wrong and no matter how you like try to change your approach, in the end it still boils down to the same thing.

12. Interviewer : So in your opinion, are there any benefits of across the curriculum teaching ?

Educator : There is, I would say there is eh.. also across the curriculum. For the child especially, sometimes a child may eh ..what is the word, form a certain type of bond with the teacher, is more comfortable with the teacher, so it will work to his advantage .

Interviewer : So that would be a benefit ?

Educator : that would be one benefit. Em.. what would the other be, and you as a teacher also are not stagnating, you know, in one field - and you are not looking at yourself as separate and isolated from other fields, and I think that was a problem especially for teachers like in the maths field or in the science field. They felt that they were completely separated from the other subjects in the school .

13. Interviewer: Do you have any suggestions to assist educators who are not specialists in the field of MLMMS? If yes, if you could just elaborate on it .

Educator : yes I think they should be able to approach other people who have expertise in the subject rather than just relying on the textbook. They could ask for assistance in methodology, approach especially and time management also I feel sometimes especially in maths, you find you need to know how to manage your time and if you are not a specialist, you don't really know for example like you've got problem solving, we've got algebra, geometry plus bonds and tables and drillwork, so how do you actually fit all that into your one weekslot ? and also like you are supposed to teach, certain like short methods and stuff like that. The teacher themselves, should also know how to do these things eh..Like I was able to work well in maths, because I had some mathematics. I had

done it at matric and I had taught a year after my Senior Secondary no my Junior Secondary teaching experience but someone who hadn't done maths, you know, will really find a problem. So a teacher of maths will find just as much a problem as the child who is doing maths.

Interviewer : Is it ? Thank you very much Mrs. Naidoo for your time.